

HIGH LINEARITY DOHERTY COMMUNICATION AMPLIFIER WITH PHASE CONTROL

ABSTRACT OF THE DISCLOSURE

A high linearity Doherty power amplifier with phase delay generation and control via passive and active components. In one embodiment, phase delay generation and control is implemented by an active phase shifter comprising a lower differential unit for generating a first differential output signal, an upper differential unit for generating a second differential output signal, and a phase control unit for tuning a phase difference between the first and second differential output signals within a phase tolerance. In addition, to improve efficiency and linearity characteristics, the power amplifier receives a voltage control signal to bias a supplemental amplifier so that the power amplifier operates in a Doherty mode in a low output power range and in a non-Doherty mode in a high output power range.